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LIFE STRESS, SELF-PREOCCUPATION, AND SOCIAL SUPPORTS.(U)
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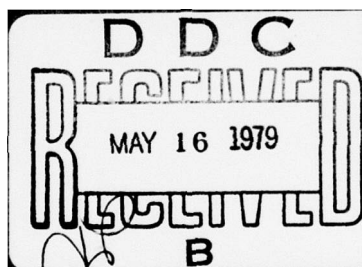
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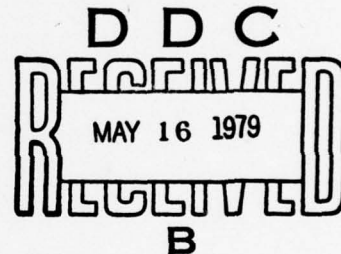
Report SCS-LS-008

Life Stress, Self-Preoccupation, and Social Supports

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April 15, 1979

Technical Report



Approved for Public Release

Prepared for:

OFFICE OF NAVAL RESEARCH
800 North Quincy Street
Arlington, Virginia 22217

79 05 11 019

This research was sponsored by the Organizational Effectiveness Research Program, Office of Naval Research (Code 452)
Under Contract No. N00014-75-C-0905, NR-170-804

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SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER SCS-LS-008	2. GOVT ACCESSION NO.	3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle) Life Stress, Self-Preoccupation, and Social Supports,		5. TYPE OF REPORT & PERIOD COVERED Technical Report,
7. AUTHOR(s) Irwin G. Sarason		6. PERFORMING ORG. REPORT NUMBER
9. PERFORMING ORGANIZATION NAME AND ADDRESS Department of Psychology NI-25 University of Washington Seattle, Washington 98195		8. CONTRACT OR GRANT NUMBER(s) N00014-75-C-0905
11. CONTROLLING OFFICE NAME AND ADDRESS Organizational Effectiveness Research Program Office of Naval Research (Code 452) Arlington, Virginia 22217		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS NR-170-804
14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office) 12/24/79		12. REPORT DATE Apr 15 1979
		13. NUMBER OF PAGES 41
		15. SECURITY CLASS. (of this report) Unclassified
		15a. DECLASSIFICATION/DOWNGRADING SCHEDULE
16. DISTRIBUTION STATEMENT (of this Report) Approved for public release		
17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)		
18. SUPPLEMENTARY NOTES This article is based on the Presidential Address delivered at the meeting of the Western Psychological Association, San Diego, California, April 6, 1979.		
19. KEY WORDS (Continue on reverse side if necessary and identify by block number) Life stress Social support Self-preoccupation		
20. ABSTRACT (Continue on reverse side if necessary and identify by block number) A theoretical framework for stress research is presented which emphasizes the role of cognitions related to situational demands, constraints, and opportunities. The nature of these cognitions is influenced by personality characteristics, recent life experiences, and social supports. Relevant research dealing with these factors is reviewed. Two studies in which elements of social supports were experimentally manipulated are described. Their clinical and developmental implications are discussed.		

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S/N 0102-LF 014-6601

Unclassified

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Abstract

A theoretical framework for stress research is presented which emphasizes the role of cognitions related to situational demands, constraints, and opportunities. The nature of these cognitions is influenced by personality characteristics, recent life experiences, and social supports. Relevant research dealing with these factors is reviewed. Two studies in which elements of social supports were experimentally manipulated are described. Their clinical and developmental implications are discussed.

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". . . by the afternoon I became aware that I might well be called to take the lead (office of Prime Minister). The prospect neither excited nor alarmed me. I thought it would be by far the best plan." (Winston Churchill, The Gathering Storm).

In this way, Winston Churchill described his thoughts shortly before becoming Prime Minister in the face of war. We do not know what enabled him to maintain a steadfast orientation to the task before him rather than falling into non-productive worry and self-preoccupation. We do know that his ability to respond to a call to action had survival value. This paper is about calls for action and what we know of people's responses to them.

Although they would intuitively seem to be closely related, studies of stress and anxiety have often shown little conceptual overlap. Research on stress has tended to be either experimental or naturalistic with an emphasis on a wide gamut of negative emotions and how people deal with various types of problematic situations. Research on anxiety has tended to emphasize individual differences and use a variety of research strategies. Recent work has broadened the scope of both areas to include the joint roles of individual difference variables and environmental factors involved in adaptation.

After outlining the theoretical framework, recent assessment, experimental, and clinical research is reviewed. Evidence is presented suggesting that anxiety is an important concomitant of stress. Special emphasis is given to the way in which social supports, resources in the social environment available to the individual, facilitate successful adaptation to stress and reduce anxiety. The results of two studies in which social supports were experimentally manipulated are presented towards the end of the paper, along with their implications for psychotherapy and social development.

A THEORETICAL FRAMEWORK FOR STRESS RESEARCH

While psychological stress has been defined by different writers as a stimulus, a response, and a hypothetical state, the preponderant view at the present time seems to be that it is something occurring within the organism rather than a characteristic of the situation. The environment in which stress exists is the psychological environment created by people through their cognitions. Stress involves appraisals of 1) situations or tasks confronting the individual, and 2) the individual's ability to deal successfully with them. These appraisals are made when there is a call for action, a situational demand, constraint, or opportunity of which the individual seeks to take advantage (McGrath, 1976). Calls for action vary in urgency and become stressful when they lead to such cognitions as, "I'm on the spot," and, "I've got to do something," and where success is not certain. While stressful cognitions, like other cognitions, involve information-processing, they are influenced particularly by the need to act, the importance of the outcome to the individual, the availability of a plan of action, and uncertainty about the outcome.

There are wide individual differences in the frequency and preoccupying character of stress-related cognitions. The most adaptive response to stress is a task-orientation which directs the individual's attention to the task at hand, rather than emotional reactions. Recent work has shown the adaptive value of being able to set aside temporarily one's strong emotions in order to deal with a problematic situation. In Vaillant's (1974, 1977) report of a study of college students' adjustment over a 30-year period after leaving school, he presents evidence suggesting that pervasive personal preoccupations are maladaptive in various areas, including work and marriage.

Figure 1 outlines the chain of events involved in stress. It begins with

Insert Figure 1 about here

a problematic situation. A call for action is issued when either the environment or personal concerns identify the need to do something. What is done varies widely. Stress follows a call for action when one's capabilities are perceived as falling short of the needed personal resources. In automobile driving, personal ability is usually perceived as commensurate with the situational challenge and the call for action is handled in a routine, task-oriented manner. However, stress may well up on treacherous mountain roads among people who are not confident of their ability in that situation.

Some people are able to maintain a task-orientation in the face of the call because achieving a particular goal or solution to a problem is in the forefront of their thinking. However, those who are self-preoccupied often are unable to engage in realistic planning and to weigh alternatives. The content of self-preoccupation varies widely. The anxious individual responds to stress with catastrophizing, self-blame, and thoughts of helplessness. The gap between what is required and the perceived resources is reacted to, not with task-related activity, but non-productive worry. Anxious, depressive, and angry thoughts direct attention away from the most salient aspects of the situation. Denial and retreat into fantasy may unrealistically minimize the task confronting the individual.

John Johnson (1956, p. 101), Britain's top fighter ace in the Second World War, has provided interesting illustrations of task-relevant and task-irrelevant activity in combat. In characterizing pilots on the ground immediately before a mission, he noted that they fell into two groups:

"It is fascinating to watch the reactions of the various pilots. They fall into two broad categories; those who are going to shoot and those who secretly and desperately know that they will be shot at. . ."

Johnson proceeded to describe how most of the pilots tie on their mae-vests, check their maps, study the weather forecasts and engage in last minute conversation with their ground crews or wingmen. He labeled these men the "hunters". The others are then described:

"The hunted, that very small minority (although every squadron possessed at least one), turned to their escape kits and made quite sure that they were wearing the tunic with silk maps sewn into the secret hiding place; that they had at least one oilskin-covered packet of French francs, and two if possible; that they had a compass and a revolver and sometimes specially made clothes to assist their activities once they were shot down. When they went through these agonized preparations they reminded me of aged countrywomen meticulously checking their shopping lists before catching the bus for the market town."

The ability to set aside unproductive worries and preoccupations seems to be crucial in functioning well under stress. How stress is handled depends on both the individual and the situation. Consequently, an interactional approach is required that incorporates both individual differences and situational factors (Lazarus & Launier, 1978). Both of these are part of what is going on in the life of the individual when a call for action is issued. What is going on includes available social supports and what the individual brings to the situation in terms of such dispositions as the tendency to anticipate danger, be paranoid, be obsessive, feel safe, feel competent.

At least five factors play roles in a person's response to a call for action:

1. The nature of the task;
2. The skills available for performing the task;
3. Personality characteristics (dispositions to appraise the task in particular ways or to respond with self-preoccupation);
4. Social supports;
5. The individual's history of stress-arousing experiences.

Both recent and past stress-arousing experiences can influence current behavior. Stress early in life might lead to a maladaptive approach to problems that interferes with the ability to be task-oriented when later calls for action arise (Brown et al., 1975). A piling up of relatively recent stressful experiences might have a deleterious effect on ability to attend to the task at hand. Too many calls for action result in an informational and demand overload that interferes with effective performance. Contributing to this overload in the anxious individual is hyperawareness of personal reactions, including physiological arousal, and the tendency to interpret its significance.

Calls for action and stress are not necessarily undesirable or to be avoided. On the contrary, a personal history marked by them probably makes individuals more resistant to current stressors if they are able to learn effective coping responses. An individual who has survived previous crises will probably be less likely to catastrophize and more task-oriented in the present one. An example of the positive side of stress has recently been given by the English actor, Dirk Bogarde. In a charming autobiographical account of his childhood, Bogarde (1978, p. 217) describes how his parents sent him as a young teenager to live with relatives in Scotland so that he could receive a rigorous education. He did not want to go and was friendless

and miserable most of the time he was there. Yet, in looking back, Bogarde saw something positive in his experience.

The three years in Scotland were, without doubt, the most important years of my early life. I could not, I know now, have done without them. My parents, intent on giving me a solid, tough scholastic education to prepare me for my Adult Life, had no possible conception that the education I would receive there would far outweigh anything a simple school could have provided. Life before 1934, the Summer Life if you like, with Lally and my sister in the country and the near effortless marking-time existence at the Hampstead school, had seduced me into a totally unreal existence of constant happiness, simplicity, trust and love. What I clearly needed, and what I got, was a crack on the backside which shot me into reality so fast I was almost unable to catch my breath for the pain and disillusion which were to follow.

We cannot be sure what gave Bogarde the strength to meet the challenges posed by his Scottish exile. But he has provided a clue: A reserve of strength acquired in his idyllic Summer Life, a life of warmth and freedom to explore:

. . . amazingly the Summer Life had made me strong; the break from it and all that was to follow, astonished me but left me unsurprised, cut me but left me unbloody, bewildered me but left me unafraid. And because of it I was able to enter a new phase of life which lay ahead of me with, if not total confidence (I have never had that), at least a thick veneer of it, and with the inbuilt belief that whatever happened to me anywhere at anytime, I would somehow, willy nilly, by hook or by crook, manage to survive. For myself alone if for no one else.

The enforced loneliness [in Scotland] in which I chose to dwell was not, when all is said and done, one long trail of misery and woe and barrenness. After all I was within the confines of my 'family', my own blood. I was cared for, comfortable, well fed and looked after by people who, by their own standards, were doing their very best to assist me.

Social supports, past and present, helped a miserable boy meet a challenge he had dreaded.

Recent research on life stress is important, because it has focused attention on the cumulative effects of challenges such as those Bogarde confronted. This work is valuable not because it has solved all the difficult methodological problems connected with measuring the impact of life change (it hasn't), but because it has shifted, in a favorable direction, attention to the dynamic interplay among situations, personality, and outcomes of calls for action. The chain of events in Figure 1 begins with a particular situation that sets up a call for action. How many other calls one has recently been required to answer influences how one deals with the latest problematic situation. Two people who lose their jobs, one of whom has recently been bereaved while the other person continues to have an intact family, might react quite differently to the same economic setbacks. Research on recent life events has broadened the study of stress from the situation per se as a stressor to the stressor in the context of what has gone on recently in the person's life.

LIFE CHANGE AND STRESS

The term life stress is usually used to refer to life changes that are calls for action and evoke stress. Examples of these changes include death or illness of family members, divorce, pregnancy, and marriage. Events vary in their social desirability, the amount of change they require, and personal

meaningfulness. Research has shown that while all people experience life changes, high levels of change experienced within a relatively short period of time often have deleterious effects (Johnson & Sarason, in press). Numerous studies have sought to determine the relationship between life stress and problems of health and personal adjustment.

Assessment Studies

Research on life stress has focused attention on the role of individual differences which, in interaction with environmental events, influence adjustment. Several approaches have been taken to the assessment of life stress. The oldest and most popular quantitative index is the Schedule of Recent Experiences (SRE) developed by Holmes and Rahe (1967). The SRE consists of a list of 42 events to which subjects respond by indicating those experienced during the recent past (usually 6 or 12 months). A life stress score is derived by summing values termed "life change units" associated with the events experienced. The construction of the SRE was based on the assumption that change per se is stressful regardless of the desirability of the events.

Another approach to life stress was taken with the Life Experiences Survey (LES) (Sarason, Johnson, & Siegel, 1978). Like the SRE, this measure asks respondents to indicate events experienced during the recent past. It differs, however, from the SRE in two respects. In addition to reporting events experienced in the recent past, respondents 1) categorize each event as having been desirable or undesirable, and 2) rate the degree of personal impact of the event. Summing the impact ratings of events designated as positive by the respondent (for example, getting a salary increase) provides a positive change score. A negative change score is derived by summing the impact ratings of those events experienced as negative. Thus, the LES provides

for individualized ratings of the impacts of events and for the separate assessment of positive and negative life changes. Table 1 contains excerpts

Insert Table 1 about here

from a recent version of the LES.

Studies that have assessed both positive and negative life changes have found that it is typically negative, rather than positive, change which correlates significantly with stress-related dependent measures. While the SRE and LES are short paper-and-pencil instruments, some researchers have devised more time-consuming and costly assessment approaches (often involving interviews) in order to delve into the complexities of respondents' reactions to life changes (Brown, 1974; Paykel, 1974).

Measured in various ways, life stress seems to be related to a host of variables that reflect health status, adjustment, and effectiveness of performance. Life changes, and particularly negative life changes, have been linked to many physical indicators including heart disease, complications associated with pregnancy and birth, tuberculosis, multiple sclerosis, and diabetes as well as the seriousness of several other conditions. In addition to correlations with physical illness, life stress has been found to correlate with psychological reactions including anxiety, aggression, depression, social maladjustment, somatic preoccupations, paranoia, and suicidal tendencies. Negative life changes are often correlated with poor academic performance, ineffectiveness in work situations, and job dissatisfaction (Sarason & Johnson, 1979).

Field Studies

While many researchers have been concerned with the cumulative effects of life changes, attention has also been given to "one-shot" calls for action whose character has obvious face validity and which require enormous readjustments by the affected individuals. An accident, a natural disaster (floods, earthquakes), military combat, or imprisonment in a concentration camp confront the individual with a radically different situation that involves both danger and uncertainty of outcome. Variables that influence how this situation is confronted include its duration, severity, predictability, suddenness of onset, and loss of control over one's life.

Field studies of stress have yielded valuable information about the range of cognitions and behavior stimulated by sudden life change. Follow-up studies of disaster victims suggest that the effects of stress can persist over months and years. Perhaps the greatest value of field studies is the light they shed on the phenomenology of stress. The February 1972 Buffalo Creek, West Virginia disaster illustrates this point.

Buffalo Creek suffered a flood caused by the collapse of a dam. Because of evidence indicating that collapse of the dam was attributable to negligence on the part of a coal mining company, legal proceedings were instituted on behalf of more than 600 survivors. The flood killed 125 people and there were 4000 left homeless. Psychological studies of a large group of survivors left little room for doubting that everyone exposed to the Buffalo Creek disaster had some or all of the following experiences (Lifton & Olson, 1976):

- 1) Death anxiety and a "death imprint." Not only were the survivors preoccupied during and after the flood with fears of sudden death, but they also seemed to have indelible imprints or images that evoked intense emotional reactions years after the flood. A host of ordinary life events were capable

of arousing strong stress reactions.

When it rained hard last week it was like the past came out again. I took the family down to the cellar and [at times like this] I just know the flood is going to come back . . . it's like you might step out of the trailer and get caught in something. Every time it rains I get the feeling that it's a natural thing for the floods to come (Lifton & Olson, 1976, p. 2).

2) Terrifying dreams. Years later, the survivors' dreams were still marked by terror and a feeling of being trapped.

I dream I'm in a car on a pier surrounded by muddy water - or else in a pool of muddy water. I feel like I've got to hold onto the side of the pool. If I do I'm all right. I know that I can't get out. I have to stay in it.

I've never been to no funerals except the ones right after the flood. . . . In the dream there is a big crowd at the funeral - the whole family is watching. I'm being buried. I'm scared to death. I'm trying to tell them I'm alive but they don't pay no attention. They act like I'm completely dead but I'm trying to holler to them that I'm alive. They cover me up and lower me down, but I can see the dirt on me. I'm panicked and scared. I become violent trying to push my way through the dirt. . . . I think I'll suffocate if I don't fight my way out. I feel like I'm trying to shout that I'm alive (Lifton & Olson, 1976, p. 3).

3) Survival guilt. The survivors had a sense of painful self-condemnation over having lived while others died.

4) Psychological numbing. The survivors suffered a reduced capacity for feelings of all kinds. They showed apathy, withdrawal, and depression. Psychic

numbing is perhaps the most common component of the "disaster syndrome."

5) Impaired social relationships. Many Buffalo Creek residents as a result of the flood were less able to engage in warm social relationships. They were more prone to breakdowns in human bonds and rage which made them feel out of control.

6) Search for meaning. The survivors seemed compelled to search for some meaning in the disaster. Some sought solace in religion ("It was God's will"), but most could not avoid being preoccupied with the fact that the flood was due to human negligence.

The fact that the Buffalo Creek flood was caused by human negligence makes the disaster different from natural disasters such as most floods or earthquakes. The difference is primarily in the resident's anger, inability to find meaning in what happened, and feelings of dehumanization. These reactions have also been observed in victims of the atomic bombing of Hiroshima and the Nazi concentration camp holocaust.

According to clinicians who studied the Buffalo Creek residents, more than 80% of the survivors suffered from severe psychological maladjustments, characterized by various types of self-preoccupation (Titchener & Kapp, 1976). These maladjustments usually did not seem traceable to pre-existing personality characteristics. Among the psychological and social problems observed over 2 years after the disaster were anxiety, depression, hostility and belligerence, social isolation, and a variety of physical complaints. A history marked by ability to be task-oriented under pressure was correlated with a successful adjustment.

The personal accounts of two former concentration camp inmates, Bruno Bettelheim, a psychologist (1960), and Viktor Frankl, a psychiatrist (1962), are especially valuable because they show how the ability to be task-oriented

was correlated with survival at places like Dachau and Buchenwald. Among the characteristics that contributed most to personal survival was a task-orientation, planfulness, independence, and the abilities to assess objectively what was going on in a complex situation, inhibit impulses to complain or rebel or express anger, and use fantasy as a solace and distraction. Frankl has described how mental games and fantasy helped him survive the monotony and cruelty of life in a concentration camp.

I forced my thoughts to turn to another subject. Suddenly I saw myself standing on the platform of a well-lit, warm and pleasant lecture room. In front of me sat an attentive audience on comfortable upholstered seats. I was giving a lecture on the psychology of the concentration camp! All that oppressed me at that moment became objective, seen and described from the remote viewpoint of science. By this method I succeeded somehow in rising above the situation, above the sufferings of the moment, and I observed them as if they were already of the past. Both I and my troubles became the object of an interesting psycho-scientific study undertaken by myself (Frankl, 1962, p. 73-74).

Frankl seemed to have used fantasy in a controlled, task-oriented way. Studies of concentration camp inmates have found that survivors were substantially helped if they had something to live for, a goal that they pursued tenaciously. Those who fared best in the long run were those who for one reason or another could retain their personality largely intact, where previous interests, values, and skills could to some extent be carried on during the period of incarceration. Very fortunate in this respect were some members of service professions, such as physicians, nurses, clergymen, and social workers. A major contribution to prisoners' survival was ability

to stay together with some member of their families or remain in contact with some of their prewar peers. Strong identification with ethnic or national groups proved quite supportive. Maintenance of self-esteem, a sense of human dignity and group belonging, and the belief that one was being useful all contributed to survival in both physical and psychological terms.

Long term follow-ups of concentration camp survivors have revealed a high incidence of personal maladjustment, few of which could be described as clear psychotic breaks with reality. Most involved self-preoccupations. The following are among the characteristics frequently noted when concentration camp survivors have sought psychological help (Dor-Shav, 1978; Matussek, 1975):

Depression, thoughts of suicide, guilt, and grief.

Apathy, low vitality, lack of initiative.

Irritability, emotional instability, insensitivity.

Anxiety, phobias, nightmares and sleep disturbances.

Difficulty in concentration, reduced attentiveness, poor memory.

Disturbed social relationships, feeling isolated from others.

Feelings of inferiority and inadequacy, low self-esteem.

Mistrust of the motives of others, hostility.

Developmental Studies

Floods and concentration camps are imposed on people. Other crises grow out of their own paths of personal development. Beginning with birth and entry into a complex, often confusing world, continuing through childhood, adolescence, adulthood, and the declining years of advanced age, crises build up and are resolved in either adaptive or maladaptive ways. Stressful transitions come about because of changes in the operation of biological, personal, cultural, environmental, and historical variables. Adaptation to one life

crisis often influences success in adaptation later on.

While all significant life changes require readjustment, when they occur at certain points in life their effects may be especially severe or long-lasting. In some cases there seems to be delayed effects of stress that tend to be obscured by intervening happenings. This is exemplified by a study Brown et al. (1975) conducted of depression in working class English women. One factor which significantly distinguished depressed women from women with other types of dysfunction was the high incidence of separation from or loss of their mothers by death in early childhood. While loss of a mother at an early age has many immediate effects, the delayed effect during the middle years of life suggests that even though certain people seem successfully to have gotten over a period of stress, they may in some way continue to live with it. Recent research on the effects of environmental factors (such as noise) has also focused attention on the delayed effects of stress (Cohen, 1978; Glass & Singer, 1972).

During recent years, developmental periods beyond childhood and adolescence have received increased attention and study (Levinson, 1978; Vaillant, 1977). This research has focused on specific events that force change or calls for action on the individual and where self-preoccupation is maladaptive. For example, it has been shown that there persists after the end of most marriages, whether the marriages had been happy or unhappy and whether the marital dissolution had been sought or not, a sense of bonding to the spouse. Pining for the lost spouse may continue despite the availability of alternative relationships and despite absence of liking, admiration, or respect. This persisting bond to the spouse resembles the attachment bond of children to parents.

STRESS, VULNERABILITY, AND SOCIAL SUPPORTS

The evidence reviewed is consistent with the model shown in Figure 1. Situations bring calls for action and evoke appraisals. The individual's overt behavior is a product not only of the call for action but also of the cognitions the call stimulates (anxiety, depression, anger, denial, task-orientation). These cognitions are not necessarily mutually exclusive. Not represented in Figure 1 is the fact that past experiences, cognitive styles, and a variety of individual difference variables influence how much stress is aroused in a situation and the individual's ability to cope with it. Experience and success with similar situations, well-founded self-confidence, and ability to remain composed and "think on one's feet", all contribute to realistic appraisals of and responses to situations.

Characteristics, such as the ability to solve a problem rather than fall to pieces in the face of it, are strongly influenced by personality development. This development takes place in a matrix of social relationships. Humans are social beings. Even as adults, most people require a certain minimum level of interaction with others. Evidence is accumulating that when social bonds are few or weak, they are at greater risk for mental health problems.

Bowlby (1973), after an extensive review of the literature, concluded that human beings of all ages are at their happiest and most effective when they are confident that there are trusted persons behind them who will come to their aid should difficulties arise. Such trusted persons provide a secure base from which to operate and constitute social supports for the individual. Ruff and Korchin's (1967) study of astronauts is consistent with this point of view. They found that these self-reliant, adaptable men come from families that provided stable, supportive environments. Henderson and Bostock (1975)

reported a particularly dramatic example of the role social supports play in how adults cope with stress. They described how seven crewmen of a small cargo vessel survived after their ship sank off the west coast of Tasmania. The men boarded an inflatable life-raft, and drifted for nine days, experiencing wet, cold, and rough seas. One man died while they were in the life-raft and two other crewmen died shortly after reaching shore. Only a limited supply of fresh water and biscuits was available in the life-raft. Henderson and Bostock interviewed the men and obtained extensive information from them because of the unusual life-threatening experience they had lived through. Special attention was paid to the survivors' descriptions of behavior they considered to have been useful in maintaining morale and promoting effectiveness.

The most conspicuous aspect of the information obtained about the survivors was their preoccupation while on the raft with persons (wives, mothers, girlfriends) who represented significant social supports. During the interviews, Henderson and Bostock (p. 222) elicited spontaneous comments such as these:

- (S1) "We kept our hands occupied with rowing and talking about our wives. I said, 'Well, this is it. I'm never going to see anyone again.' I felt sorry for my mother . . ."
- (S2) "She (his wife) was always at the back of my mind and my son was at the back of my mind, but I didn't want to think of them too much . . . that was what I had to get back for."
- (S3) "Everyone thought how would we survive in this - we were thinking about our families. I just kept thinking about my wife and family - that was all I had to live for."

- (S4) "Every night I could see my wife's face. Every time I closed my eyes I could see my wife there."
- (S5) When asked what helped him most: "Well, I suppose a picture of my wife and kids. . . . I thought about them all the time. . . . I was worried about the boys' schooling and my daughter's future at school and what not, and what would happen to my wife."
- (S6) "We chatted about our families."
- (S7) "We all talked about our families. I told them about my missus. . . . It does pass through your mind, 'Will she be alright?'"
(Of his children) "I thought of them a lot. Even when I paddled, I used to recite their names. . . . I'd go right through them. I think it helped. It gave me determination."
(He then indicated how he said a child's name with each paddle stroke.)

As these comments make clear, the survivors both thought and talked among themselves about their closest family members. The combination of social supports in their personal lives together with the social supports they provided each other seemed to have had survival value. Henderson and Bostock (1977) followed up the survivors for two years after their rescue and found that 5 of the 7 had sought help for various types of psychological problems while the other two were living satisfying lives and, like Dirk Bogarde, looked back upon their miserable experience as a personally strengthening experience. The problems of the five who sought help included insomnia, nightmares, depression, and anxiety. The experience of short-lived extreme stress may carry a price in terms of subsequent self-pre-occupation and maladaptation to life.

Social supports are people on whom we can rely, people who let us know that they care about, value, and love us. As Cobb (1977) has pointed out, someone who believes he or she belongs to a social network of communication and mutual obligation experiences social support. Social support facilitates coping with crisis and adaptation to change. In one study, the role of social supports in the lives of pregnant women was studied, with complications of pregnancy serving as the dependent variable (Nuckolls et al., 1972). The women were assessed in two ways: 1) frequency and severity of recent life changes, and 2) social supports, people with whom the women were close, from whom they obtained affection, and on whom they could rely. Women who had many social supports had significantly fewer pregnancy complications than women who had relatively few supports. This relationship was particularly dramatic among women who had experienced high levels of life change. For this group, 91% of women who were low in social supports had birth complications, while the comparable figure for those high in social supports was 33%. The effect of social supports was much more noticeable among high than low life stress women. This study, together with other evidence, suggests that there is a protective effect of close social ties. For example, soldiers, many of whose buddies have been killed in combat, are more likely to develop combat exhaustion than soldiers who belong to intact units.

Maladaptive ways of thinking and behaving are more common among those with few social supports, particularly social supports within the family (Silberfeld, 1978). Rather than sapping self-reliance, strong family support seems to encourage it. Reliance on others and self-reliance are not only compatible but complementary to one another. While the mechanism by which an intimate relationship is protective has yet to be worked out, the

following factors are probably involved: intimacy, social integration through shared concerns, reassurance of worth, the opportunity to be nurtured by others, a sense of reliable alliance, and guidance. Personality and the wherewithal for adaptation grow out of a social-developmental matrix. Personal characteristics have a long history, including genetic and constitutional variables. While social supports also have long histories, the possibility does exist that new social relationships can have stress-buffering and therapeutic value. Psychotherapy, from this perspective, is a special social relationship directed at helping people with problems of living to face and overcome obstacles in their lives. Cummings and Follette (1976) have demonstrated that this positive psychotherapeutic effect can be noticed in the area of physical health as well as psychological well-being. Ross and Glaser (1973) described an intriguing study of residents of the Watts area of Los Angeles. In childhood, these people had lived highly stress-arousing lives, yet they grew up to be productive, self-supporting members of society. How did these exemplary individuals differ from a matched group characterized by a high crime rate, economic dependence on social agencies, and disturbed interpersonal relationships? Consistently Ross and Glaser noted that these exemplary models had themselves been influenced by exemplary models - parents, teachers, clergymen who had provided models of independence, stability, and self-respect.

RESEARCH ON SOCIAL SUPPORTS

There is considerable evidence that self-preoccupying life events often tend to have undesirable outcomes. There is also evidence suggesting that social supports serve both immunizing and therapeutic functions. Unfortunately, much of the evidence comes from anecdotes and clinical observation rather than

systematic data-gathering. Heller (in press) has pointed out the need for two types of more systematic research: 1) objective definition and measurement of levels of social supports, and 2) experimental manipulation of the elements of social supports.

The psychotherapeutic situation provides clues concerning these elements. Sloane et al. (1975) did a follow-up study of maladjusted persons who had received either psychotherapy or behavior therapy. When compared with an untreated control group, members of the two therapy groups showed noticeable improvement. What is particularly relevant to the present discussion is the fact that, despite the apparent differences in therapeutic tactics and underlying assumptions, the clients in the two therapy groups responded in similar ways to questions about the reasons for their improvement.

Regardless of whether they received psychodynamic or behavioral treatment, the subjects attributed their improvement to the therapist's caring attitude, desire to help, encouragement, willingness to listen, ability to convey a sense of hope, confidence in the client, and communication that the client was highly valued as a person. These findings, together with other evidence, suggest that the major effective ingredient of psychotherapy and counseling may be the acceptance and social support implied by these attributions. If this were true, it would be completely consistent with the emphasis Rogerian therapists have for years placed on the importance of unconditional positive regard. The psychotherapeutic situation is a safe place in which to obtain the support and understanding needed for the development of self-confidence and social skills. These, in turn, lead to more lasting and rewarding social relationships.

At the present time, no widely agreed upon index of social supports exists. There is, however, some evidence about the experimental manipulation of social supports. Two recent experiments suggest the potential of a laboratory approach to social supports. In one, the subjects were college students differing in test anxiety. Subjects with high, middle, and low scores on the Test Anxiety Scale (TAS) (Sarason, 1978) performed on a difficult anagrams task either under a neutral or experimental condition. The experimental condition emphasized that ability to solve the anagrams was related to intelligence and likelihood of success in doing college-level academic work. Previous research had shown that highly test anxious people perform relatively poorly under this condition and that their performance is hindered by excessive self-preoccupations concerning failure and its consequences (Sarason & Stoops, 1978).

A second experimental variable was the opportunity for social supports. While half the subjects performed only on the anagrams, subjects under the social support condition participated in a prior 20 minute group discussion. These discussions were attended by six subjects who were asked to discuss a series of questions about their academic experiences. The questions included:

"Are stress and anxiety about exams important problems here at the University of Washington?"

"How often do you share your worries about tests with other students?"

"What are the barriers to this sharing of personal concerns?"

"Do you feel this discussion has brought you closer to people who otherwise would just be 'other' students?"

Except for suggesting the specific topics, the discussions were free-wheeling. In addition to the six subjects, two confederates were present at

the discussions. Their roles were to 1) stimulate discussion and keep it going if necessary, 2) positively reinforce comments made by participants and build group feeling and a sense of sharing, and 3) at the end of the discussion to say that the discussion had been valuable for them, comment on the degree of compatability among the group members and suggest that the members get together after completion of the experiment to see if an informal meeting could be arranged for continuing the discussion. This condition was designed to heighten the sense of social association and shared values among group members.

Consistent with findings of previous research, there was a significant Test Anxiety X Instructions interaction ($F(2, 168) = 5.30, p < .01$), with the high TAS subjects performing more poorly under the condition which emphasized the evaluative aspect of subjects' performance. Subjects who participated in the group discussions performed at a higher level than did subjects who did not ($F(1, 168) = 5.60, p < .02$). Of particular interest was the Test Anxiety X Social Support interaction ($F(2, 168) = 4.46, p < .01$). Figure 2 shows the means involved in this interaction. Comparisons for each

Insert Figure 2 about here

of the three levels of test anxiety yielded a significant difference between the social supports experimental and control groups only for high TAS subjects ($p < .001$). Although the TAS X Instructions X Social Supports interaction only approached a statistically significant level, for subjects in the high test anxiety group who received the evaluative instructions, those who also participated in the group discussions performed on the anagrams at a higher level than those who did not.

In Figure 1, anxiety was depicted as a self-preoccupying reaction to stress. Among the hallmarks of anxiety are thoughts of personal inadequacy and helplessness. The results of this experiment suggest that association with others and hope of its continuation may reduce the potency of these thoughts even when the threat of evaluation is present. As anxious self-preoccupation decreases, the opportunity for task-oriented thinking increases with consequent improved performance.

In the experiment just described, social support was defined in terms of group association. A second experiment explored another dimension of social supports, acceptance. Test anxiety scores were again used as a measure of individual differences in self-preoccupation aroused by an evaluative call for action. An anagrams task administered in groups and instructional conditions similar to the ones employed in the experiment just described were used. Social support was provided vicariously for half the subjects. This was done by having a confederate raise his hand after the experimenter had introduced the anagrams task and say, "I don't think I can work these problems. They get me all upset. I'm no good at them." The experimenter responded with, "You're not the only person who clutches up in this kind of situation. I can tell from the fact that you took the initiative to tell me how you feel that you're an intelligent person. Just do your best. That's all anybody can expect. I think you have more ability than you give yourself credit for."

There were four experimental groups treated with 1) evaluative instructions, 2) social support, 3) evaluative instructions and social support, and 4) a control group. The sixteen subjects under each condition were divided into high and low TAS groups. The effects for Test Anxiety, social support, and their interaction were all statistically significant ($p < .05$ or less).

Table 2 gives the cell means for the eight groups. While high TAS subjects

Insert Table 2 about here

performed more poorly than the low TAS subjects under the evaluative instructions, their performance was equal to or better than the low TAS groups for the two conditions in which support was present. What was the nature of the support provided? The intention was to create a condition in which the subjects could observe a peer who was listened to with respect and interest. The emphasis was on the experimenter's unconditional acceptance of the subject. This was based on the idea that when a person feels valued, anxious self-preoccupation will be reduced. Although the evidence presented here obviously does not provide information about other self-preoccupying thoughts such as anger, the paradigm of Figure 1 suggests that similar results might obtain for them.

These results and evidence mentioned earlier suggest that viewing stress simply in terms of appraisals of situational threats leaves out two important variables, personality characteristics and social supports. Personality characteristics moderate or intensify the impact of certain other personal characteristics (Johnson & Sarason, 1979). For example, while intelligence level is related to many types of performance, anxiety level can also influence that relationship. Highly anxious intelligent people often surprise us by their poor performance. The poor performance is most likely to occur under high pressure conditions. While stress research has typically focused on the effects of situational challenges, the evidence reviewed here suggests that under certain conditions social supports function as a moderator by counteracting undesirable consequences of high anxiety conceptualized here as self-preoccupation.

CLINICAL AND DEVELOPMENTAL DIMENSIONS OF SOCIAL SUPPORTS

Despite the fact that the most important dimensions of social supports have not yet been identified, there is already evidence that people with problems cope with them better when other people are available to provide comfort, information, and encouragement. Recently bereaved people are greatly in need of social supports. What they need is not necessarily conversation, but simply sensing the presence of caring others. A major research task is specification of what is meant by "caring others."

Psychotherapy

However the properties of social supports are defined, their outcome seems to be what Frank (1974), in characterizing psychotherapy, referred to as the restoration of morale. One of the features of transference in the clinical situation is its role in giving the client a sense of hope and the ego strength to engage in self-exploration. Most persons who seek therapy feel "stuck." They are living under circumstances that seem to push them into a corner. Some people really are stuck. They are lonely and feel helpless. Finding even just one warm and attentive listener often works wonders. In a recent study, Whitcher and Fisher (1979) found that for hospitalized women, being physically touched warmly by a caring nurse prior to undergoing surgery resulted not only in lowered anxiety, but also in faster clinical improvement than was shown by patients treated with the usual hospital routine. It has also been shown that asthmatics who have a relative high level of social supports require lower drug dosages in their treatment than do asthmatics who are more isolated (de Araujo et al., 1973).

Earlier, Sloane et al.'s (1975) finding that psychotherapy and behavior therapy were equally superior to no-treatment was mentioned. Recently, Strupp and Hadley (in press) studied whether persons not trained as psychotherapists but who had personal qualities usually attributed to good clinicians might be effective in helping people with adjustment problems. Their study included two groups of therapists. One consisted of experienced professional psychotherapists and the other a group of Vanderbilt University professors. The professors were selected on the basis of their widely recognized interest in students, accessibility, and willingness to listen and help them solve personal problems. None of the professors was a psychologist or in another helping profession. The subjects were neurotic college students, most of whom complained of anxiety. A third group constituted a "wait-list" control. Subjects in this group went through an assessment procedure, but the start of therapy was delayed.

The major result was that there were no significant differences attributable to the type of therapist to whom a given client was assigned. Clients treated by either psychotherapists or professors showed more improvement than did controls. The indices of change included self-ratings, independent experts' judgements, MMPI scores, and clinicians' evaluations of client progress. Favorable outcomes were most prevalent among clients whose therapists were active in sessions, providing clients with information, encouragement, and opinions which they expressed relatively freely. Therapists whose clients improved made special efforts to make it easy for clients to discuss their problems, focused on the here-and-now rather than early childhood experiences, and encouraged the clients to seek new social activities. Strupp and Hadley's results suggest that the personal qualities of therapists and their abilities to provide social supports may be more important than either their training or theoretical orientation.

Psychological Development

A growing body of literature supports Bowlby's (1973) contention that supportive social attachments in early childhood promote self-reliance and self-esteem. In terms of the paradigm of Figure 1, a secure, accepting, encouraging environment reduces the tendency to anxious self-preoccupation when confronted with a call to action. Children reared in this sort of environment are encouraged to explore their ever-widening world. This, in turn, contributes to what Bandura (1977) calls self-efficacy and White (1959) calls effectance motivation. The belief that help is available seems to have a liberating effect on exploration and skill development. Anxiety and self-efficacy should be negatively correlated because self-efficacy cannot develop optimally in areas of one's life tinged by preoccupying anxious thoughts. High anxiety and low self-efficacy can be either specific to a particular situation, such as academic performance, or pervade many aspects of life.

Children become anxious when they are required to respond to calls for action with which they feel ill-equipped to deal. Their incompetence and the dangers posed by it turn the child's attention inwards. A number of factors, often operating simultaneously, contribute to this anxiety. For example, these are some of the possible determinants of a child's test anxiety in a particular testing situation:

1. Chronic worrying about being evaluated. The tendency to worry might have been acquired through the child's observations of parents' behavior when they were in evaluative situations.
2. Poor skills in attending and concentrating on classroom and homework assignments. The consequent poor performance understandably leads to self-doubt and self-debasement.

3. Recent stress-arousing life events that preoccupy the child.
For example, the child who is worried about his or her ill mother cannot be optimally attentive to intellectual pursuits. School refusal often occurs when children are worried about a parent at home.
4. Inadequate social supports; for example, parents may communicate to the child the contingency between good school performance and displays of love and affection; they may make it clear that doing well is very important, but be less explicit about letting the child know they will love him or her even after failure.

CONCLUSION

The problem of stress is a problem of the direction of attention and attentional overload. Stress becomes maladaptive when it evokes self-preoccupying thoughts that interfere with attention to the environment and tasks with which the individual must deal. This paper has discussed two factors that influence attention, personal dispositions and social supports. Personality characteristics can be relatively stable (for example, test anxiety scores) or products of recent experience (scores on instruments like the Life Experiences Survey). In either case, they can contribute to informational overload if the individual must cope, not only with information from the environment, but also from within. Social supports are effective, perhaps because the presence of an interested other shakes the individual's assumption that he or she must deal with this information alone. The presence of an interested other is therapeutically inconsistent with the individual's catastrophizing convictions and sense of impotence to cope with an idiosyncratic amalgam of real and/or imagined stressors.

An area of inquiry that especially needs investigation concerns the relationship between social supports and social competence. Do social supports affect level of social competence or does social competence determine whether a person gets social support? The socially competent individual possesses skills that elicit from others interest and approach responses not available to the less socially appealing individual. Neither social supports nor social competence occurs in a vacuum. How they interact with each other must be understood.

There is every reason to believe that the ingredients of social supports can be identified and their effects determined. At present, the idea of social supports is like love - in one sense, we all know what it is; but in another sense - the scientific sense - we don't. Laboratory and field studies might contribute ultimately to a theory of social supports, meaningful primary prevention, and improvements in therapeutic effectiveness.

Footnotes

This article is based on the Presidential Address delivered at the meeting of the Western Psychological Association, San Diego, California, April 6, 1979.

The research described was supported by the United States Office of Naval Research.

I am indebted to these colleagues who reviewed an earlier version of the manuscript: Mark T. Greenberg, James H. Johnson, Henry M. Levine, Barbara R. Sarason, and Ronald E. Smith.

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References

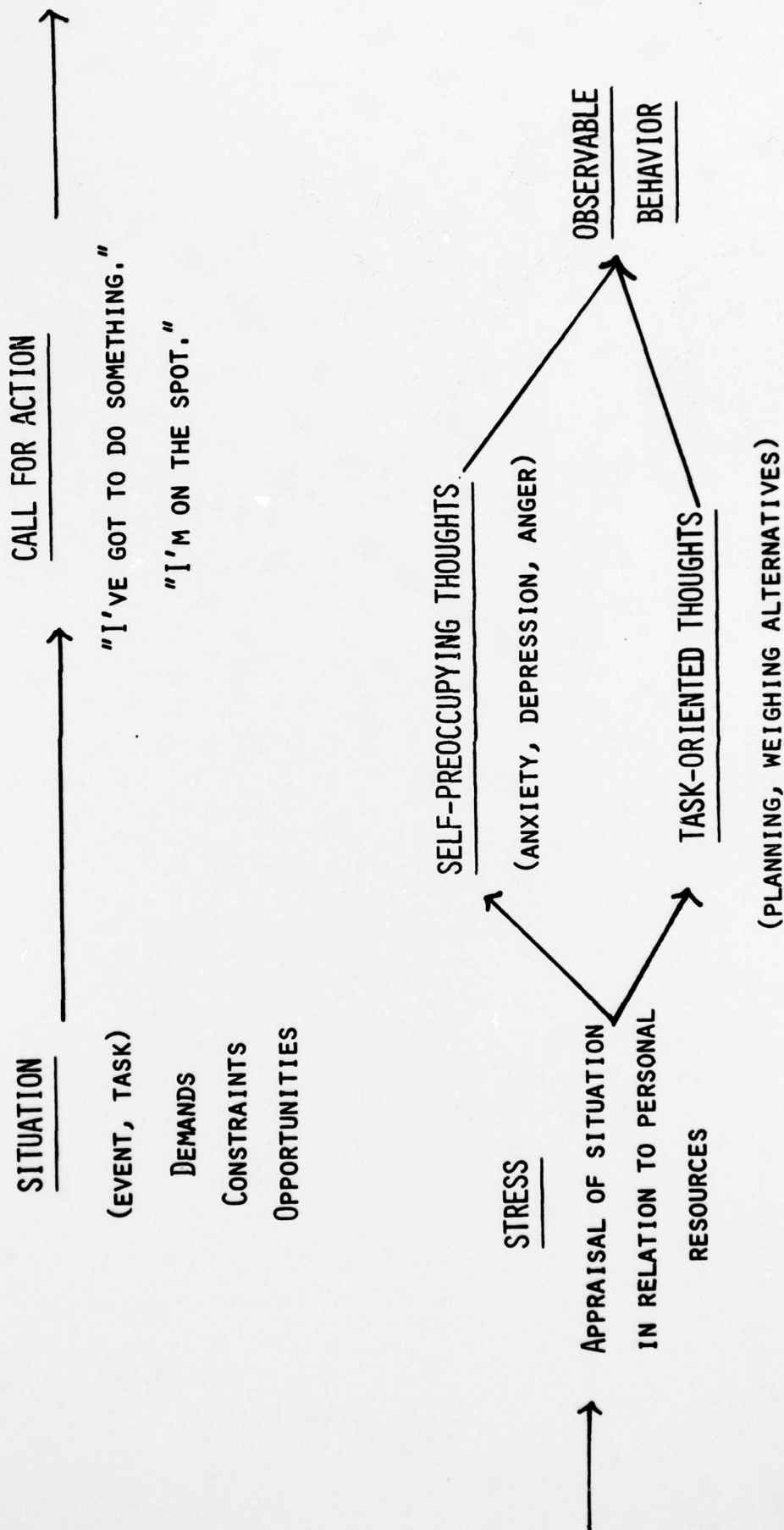
- Bandura, A. Self-efficacy: Toward a unifying theory of behavioral change. Psychological Review, 1977, 84 (2), 191-215.
- Bettelheim, B. The informed heart. New York: The Free Press, 1960.
- Bogarde, D. A postillion struck by lightning. Frogmore, England: Triad/Panther Books, 1978.
- Bowlby, J. Separation: Anxiety and anger. New York: Basic Books, 1973.
- Brown, G. W. Meaning, measurement, and stress of life events. In B. S. Dohrenwend & B. P. Dohrenwend (Eds.) Stressful life events: Their nature and effects. New York: John Wiley & Sons, 1974, 217-243.
- Brown, G. W., Bhrolchain, M. N., & Harris, T. Social class and psychiatric disturbance among women in an urban population. Sociology, 1975, 9, 225-254.
- Cobb, S. Social support as a moderator of life stress. Psychosomatic Medicine, 1976, 38 (5), 300-313.
- Cohen, S. & Spacapan, S. The aftereffects of stress: An attentional interpretation. Environmental Psychology and Nonverbal Behavior, 1978, 3 (1), 43-57.
- Cummings, N. A. & Follette, W. T. Brief psychotherapy and medical utilization: An eight-year follow-up. In H. Dörken and associates (Eds.) The professional psychologist today: New developments in law, health insurance, and health practice. San Francisco: Jossey-Bass, 1976, 165-174.
- de Araujo, G. D., van Arsdel, P. P., Holmes, T. H., & Dudley, D. L. Life change, coping ability and chronic intrinsic asthma. Journal of Psychosomatic Research, 1973, 17, 359-363.

- Dor-Shav, N. K. On the long-range effects of concentration camp internment on Nazi victims: 25 years later. Journal of Consulting and Clinical Psychology, 1978, 46, 1-11.
- Frank, J. D. Psychotherapy: The restoration of morale. American Journal of Psychiatry, 1974, 131, 271-274.
- Frankl, V. E. Man's search for meaning (revised edition). New York: Simon & Schuster (Touchstone Edition), 1962.
- Glass, D. & Singer, J. Urban stress. New York: Academic Press, 1972.
- Heller, K. The effects of social support: Prevention and treatment implications. In A. P. Goldstein & F. H. Kanfer (Eds.) Maximizing treatment gains: Transfer enhancement in psychotherapy. New York: Academic Press, in press.
- Henderson, S. & Bostock, T. Coping behaviour: Correlates of survival on a raft. Australian and New Zealand Journal of Psychiatry, 1975, 9, 221-223.
- Henderson, S. & Bostock T. Coping after shipwreck. British Journal of Psychiatry, 1977, 131, 15-20.
- Holmes, T. H. & Rahe, R. H. The social readjustment rating scale. Journal of Psychosomatic Research, 1967, 11, 213-218.
- Johnson, J. E. Wing leader. London: Chatto and Windus, 1956.
- Johnson, J. H. & Sarason, I. G. Moderator variables in life stress research. In I. G. Sarason and C. D. Spielberger (Eds.) Stress and anxiety (Vol. 6). Washington, D. C.: Hemisphere Publishing Company, 1979.
- Johnson, J. H. & Sarason, I. G. Recent developments in research on life stress. In V. Hamilton and D. M. Warburton (Eds.) Human stress and cognition: An information processing approach. London: John Wiley, in press.

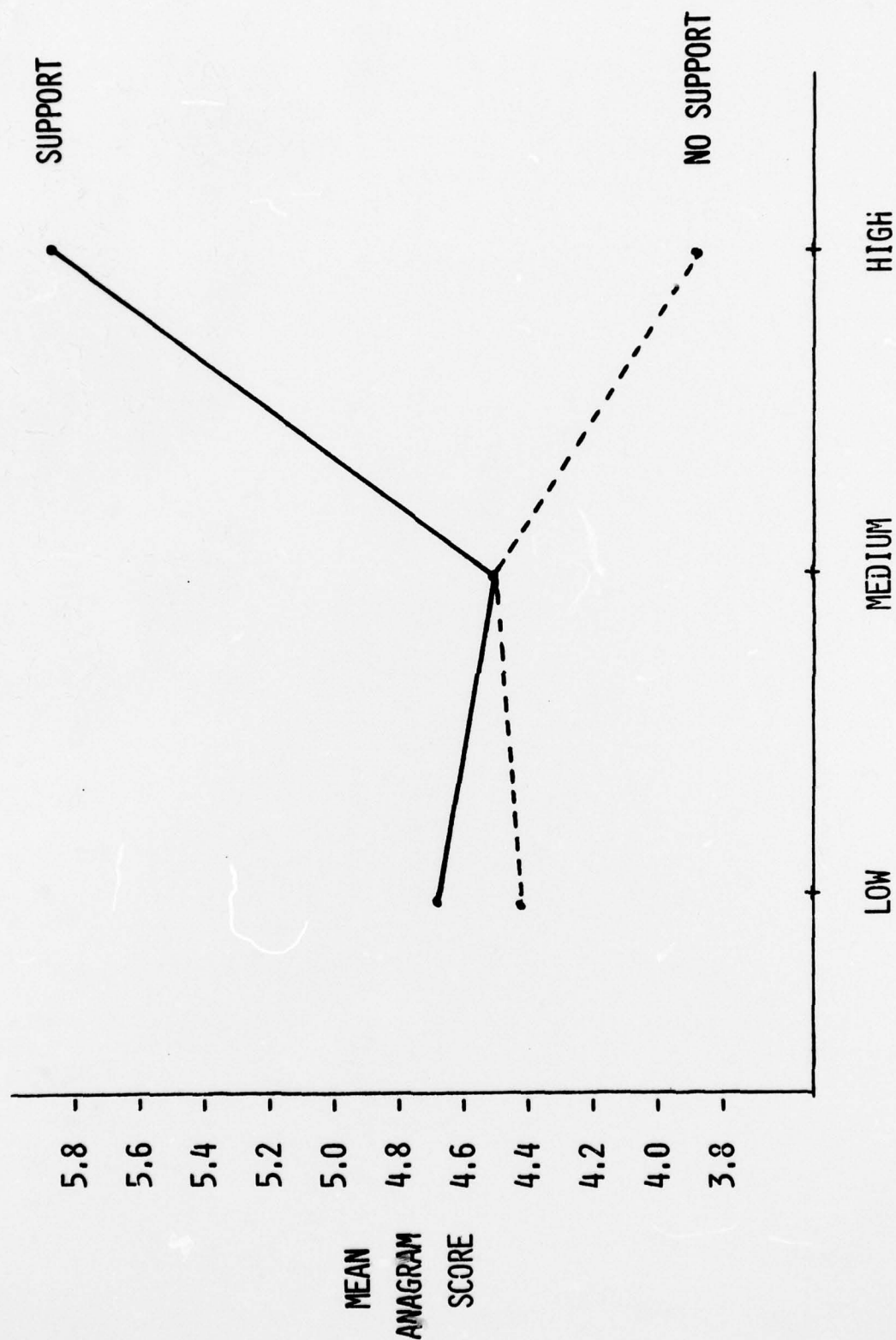
- Lazarus, R. S. & Launier, R. Stress-related transactions between person and environment. In L. A. Pervin & M. Lewis (Eds.) Perspectives in interactional psychology. New York: Plenum, 1978.
- Levinson, D. J. and associates. The seasons of a man's life. New York: Alfred A. Knopf, 1978.
- Lifton, R. J. & Olson, E. The human meaning of total disaster. Psychiatry, 1976, 39, 1-18.
- Matussek, P. and associates. Internment in concentration camps and its consequences. New York: Springer-Verlag, 1975.
- McGrath, J. E. Stress and behavior in organizations. In M. D. Dunnette (Ed .) Handbook of industrial and organizational psychology. Chicago: Rand McNally, 1976, 1351-1395.
- Nuckolls, K. B., Cassel, J., & Kaplan, B. H. Psychosocial assets, life crisis, and the prognosis of pregnancy. American Journal of Epidemiology, 1972, 95 (5), 431-441.
- Paykel, E. S. Life stress and psychiatric disorder: Applications of the clinical approach. In B. S. Dohrenwend & B. P. Dohrenwend (Eds.) Stressful life events: Their nature and effects. New York: John Wiley & Sons, 1974, 135-149.
- Ross, H. L. & Glaser, E. M. Making it out of the ghetto. Professional Psychology, 1973, 4, 347-356.
- Ruff, G. E. & Korchin, S. J. Adaptive stress behavior. In M. H. Appley & R. Trumbull (Eds.) Psychological stress. New York: Appleton-Century-Crofts, 1967, 297-206.
- Sarason, I. G. The test anxiety scale: Concept and research. In C. D. Spielberger & I. G. Sarason (Eds.) Stress and anxiety (Volume 5). Washington, D. C.: Hemisphere, 1978, 193-216.

- Sarason, I. G., Johnson, J. H., & Siegel, J. M. Assessing the impact of life changes: Development of the life experiences survey. Journal of Consulting and Clinical Psychology, 1978, 46, 932-946.
- Sarason, I. G. & Johnson, J. H. Life stress, organizational stress, and job satisfaction. Psychological Reports, 1979, 44, 75-79.
- Sarason, I. G. & Stoops, R. Test anxiety and the passage of time. Journal of Consulting and Clinical Psychology, 1978, 46 (1), 102-109.
- Silberfeld, M. Psychological symptoms and social supports. Social Psychiatry, 1978, 13, 11-17.
- Sloane, R. B., Staples, F. R., Cristol, A. H., Yorkston, N. H., & Whipple, K. Short-term analytically oriented psychotherapy versus behavior therapy. Cambridge, Massachusetts: Harvard University Press, 1975.
- Strupp, H. H. & Hadley, S. W. Specific versus nonspecific factors in psychotherapy: A controlled study of outcome. Archives of General Psychiatry, in press.
- Titchener, J. L. & Kapp, F. T. Family and character change at Buffalo Creek. American Journal of Psychiatry, 1976, 133, 295-299.
- Vaillant, G. E. Natural history of male psychological health: II. Some antecedents of healthy adult adjustment. Archives of General Psychiatry, 1974, 31, 15-22.
- Vaillant, G. E. Adaptation to life. Boston: Little, Brown, 1977.
- Whitcher, S. J. & Fisher, J. D. Multidimensional reaction to therapeutic touch in a hospital setting. Journal of Personality and Social Psychology, 1979, 37, 87-96.
- White, R. W. Motivation reconsidered: The concept of competence. Psychological Review, 1959, 66, 297-333.

FIGURE 1
THEORETICAL MODEL OF STRESS



MEAN ANAGRAM PERFORMANCE AS A FUNCTION
OF TEST ANXIETY AND SOCIAL SUPPORTS



ANXIETY LEVEL

FIGURE 2

Table 1

Excerpts from the Life Experiences Survey (LES)

Instructions

Listed below are a number of events which may bring about changes in the lives of those who experience them.

Rate each event that occurred in your life during the past year as Good or Bad (circle which one applies).

Show how much the event affected your life by circling the appropriate statement (no effect - some effect - moderate effect - great effect).

If you have not experienced a particular event in the past year, leave it blank.

Please go through the entire list before you begin to get an idea of the type of events you will be asked to rate.

Event	Type of Event		Effect of Event on Your Life			
	Good	Bad	no effect	some effect	moderate effect	great effect
1. Marriage	Good	Bad	no effect	some effect	moderate effect	great effect
2. Death of close family member						
a. mother	Good	Bad	no effect	some effect	moderate effect	great effect
b. father	Good	Bad	no effect	some effect	moderate effect	great effect
c. brother	Good	Bad	no effect	some effect	moderate effect	great effect
d. sister	Good	Bad	no effect	some effect	moderate effect	great effect

Table 1 continued

Life Experiences Survey continued

Event	Type of Event	Effect of Event on Your Life			
e. grandmother	Good Bad	no effect	some effect	moderate effect	great effect
f. grandfather	Good Bad	no effect	some effect	moderate effect	great effect
g. other (specify)	Good Bad	no effect	some effect	moderate effect	great effect
3. <u>Male</u> Wife's/Girlfriend's pregnancy	Good Bad	no effect	some effect	moderate effect	great effect
4. <u>Female</u> Pregnancy	Good Bad	no effect	some effect	moderate effect	great effect
5. Gaining a new family member (through birth, adoption, family member moving in, etc.)	Good Bad	no effect	some effect	moderate effect	great effect
6. Change of residence	Good Bad	no effect	some effect	moderate effect	great effect
7. Ending of formal schooling	Good Bad	no effect	some effect	moderate effect	great effect

Table 2

Mean Anagram Performance as a Function of Test Anxiety
and Experimenter's Supportive Comments

Test Anxiety	Conditions			
	Evaluative Instructions	Experimenter's Support	Evaluative Instruction & Experimenter's Support	Control
High	2.9	6.5	5.0	3.8
Low	5.4	4.4	4.8	3.8

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